

# HISTORIC PROPERTY INVENTORY FORM

## IDENTIFICATION SECTION

**Field Site No.** 283-E **OAHP No.** \_\_\_\_\_ **Date Recorded** 10 April 1995  
**Site Name Historic** Water Filtration Plant Building Revised 27 May 1998  
**Common** \_\_\_\_\_  
**Field Recorder** M.V. Scott, M.S. Gerber, D.W. Harvey, J.K. Keating  
**Owner's Name** U.S. Department of Energy, Richland Operations Office  
**Address** P.O. Box 550  
**City/State/Zip Code** Richland, WA 99352

State of Washington, Department of Community Development  
Office of Archaeology and Historic Preservation  
111 21st Avenue Southwest, Post Office Box 48343  
Olympia, Washington 98504-8343 (206)753-4011

## Status

- ☒ Survey/Inventory  
☐ National Register  
☐ State Register  
☐ Determined Eligible  
☐ Determined Not Eligible  
☐ Other (HABS, HAER, NHL)  
☐ Local Designation

## Photography

Hanford Photography Lab:  
95050394-4  
Photography Neg. No. HCRL: Roll 330, Frames 12-16, 19-22  
(Roll No. & Frame No.)  
View of N, W, S Facades, Basins, Interior  
Date 1995, March 1998

Photo at right: Roll 330, Frame 22. View of north and east  
facades; clearwell in foreground, settling basins at right

## Classification

### District Status

☐ District  
☒ NR

### Contributing

☒

☐ Site  
☒ SR

### Non-Contributing

☒ Building  
☐ LR

☐ Structure  
☐ INV

☐ Object

### District/Thematic Nomination Name

Hanford Site Manhattan Project and Cold War Era Historic District

## Description Section

### Materials & Features/Structural Types

**Building Type** Industry  
**Plan** L-shaped  
**Structural System** Reinforced Concrete  
**No. of Stories** 3 and 2

### Roof Type

☐ Gable ☐ Hip  
☒ Flat ☐ Pyramidal  
☐ Monitor ☐ Other (specify) \_\_\_\_\_  
☐ Gambrel  
☐ Shed

### Roof Material

☐ Wood Shingle  
☐ Wood Shake  
☐ Composition  
☐ Slate  
☐ Tar/Built-up  
☐ Tile  
☐ Metal (specify) \_\_\_\_\_  
☒ Other (specify) concrete  
☐ Not visible

### Foundation

☐ Log ☐ Concrete  
☐ Post & Pier ☐ Block  
☐ Stone ☒ Poured  
☐ Brick ☐ Other (specify) \_\_\_\_\_  
☐ Not visible

### Cladding (exterior Wall Surfaces)

☐ Log  
☐ Horizontal Wood Siding  
☐ Rustic/Drop ☐  
☐ Clapboard ☐  
☐ Wood Shingle  
☐ Board and Batten  
☐ Vertical Board  
☐ Asbestos/Asphalt  
☐ Brick  
☐ Stone  
☐ Stucco  
☐ Terra Cotta  
☒ Concrete/Concrete Block  
☐ Vinyl/Aluminum Siding  
☐ Metal (specify) \_\_\_\_\_  
☐ Other (specify) \_\_\_\_\_

## Integrity

(Include detailed description in  
**Description of Physical Appearance)**

	Intact	Slight	Moderate	Extensive
Changes to plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to windows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to original cladding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to interior	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## LOCATION SECTION

**Address** Building 283-E, 200 East Area  
**City/Town/County/Zip Code** Richland/Benton County/99352  
**Twp** 12N **Range** 26E **Section** 3 **I/4 Section** SE **1/4 1/4 Sec** SE  
**Tax No./Parcel No.** \_\_\_\_\_ **Acreage** \_\_\_\_\_  
**Quadrangle or map name** Gable Butte, Washington Quad. - 7.5 min series 1986  
**UTM References Zone** \_\_\_\_\_ **Easting** 305600 **Northing** 5158020  
**Plat/Block/Lot** \_\_\_\_\_  
**Supplemental Map(s)** \_\_\_\_\_



### High Styles/Forms (Check one or more of the following)

<input type="checkbox"/> Greek Revival	<input type="checkbox"/> Spanish Colonial Revival/Mediterranean
<input type="checkbox"/> Gothic Revival	<input type="checkbox"/> Tudor Revival
<input type="checkbox"/> Italianate	<input type="checkbox"/> Craftsman/Arts & Crafts
<input type="checkbox"/> Second Empire	<input type="checkbox"/> Bungalow
<input type="checkbox"/> Romanesque Revival	<input type="checkbox"/> Prairie Style
<input type="checkbox"/> Stick Style	<input type="checkbox"/> Art Deco/Art Moderne
<input type="checkbox"/> Queen Anne	<input type="checkbox"/> Rustic Style
<input type="checkbox"/> Shingle Style	<input type="checkbox"/> International Style
<input type="checkbox"/> Colonial Revival	<input type="checkbox"/> Northwest Style
<input type="checkbox"/> Beaux Arts/Neoclassical	<input type="checkbox"/> Commercial Vernacular
<input type="checkbox"/> Chicago/Commercial Style	<input type="checkbox"/> Residential Vernacular (see below)
<input type="checkbox"/> American Foursquare	<input checked="" type="checkbox"/> Other (specify)
<input type="checkbox"/> Mission Revival	<u>Industrial Vernacular</u>

### Vernacular House Types

<input type="checkbox"/> Gable Front	<input type="checkbox"/> Cross Gable
<input type="checkbox"/> Gable Front and Wing	<input type="checkbox"/> Pyramidal/Hipped
<input type="checkbox"/> Side Gable	<input type="checkbox"/> Other (specify) _____

## NARRATIVE SECTION

### Study Unit Themes (check one or more of the following)

☐ Agriculture  
☐ Architecture/Landscape Architecture  
☐ Arts  
☐ Commerce  
☐ Communications  
☐ Community Planning/Development

☐ Conservation  
☐ Education  
☐ Entertainment/Recreation  
☐ Ethnic Heritage (specify) \_\_\_\_\_  
☐ Health/Medicine  
☐ Manufacturing/Industry  
☐ Military

☐ Politics/Government/Law  
☐ Religion  
☒ Science & Engineering  
☐ Social Movements/Organizations  
☐ Transportation  
☒ Other (specify) Manhattan Project and Cold War Eras  
☒ **Study Unit Sub-Theme(s)** Chemical Separation,  
Facilities Support (Infrastructure)

### Statement of Significance

Date of Construction 1943-1944 Architect/Engineer/Builder E.I. du Pont de Nemours Corporation

☒ In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.

☒ In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).

The 283-E Water Filtration Plant Building was built in 1943-44 to filter raw water for sanitary water use in the 200 East Area. 283-E received water from the 282-E Pumphouse and Reservoir facility, that was supplied from the 100-B Areas pumphouse (100-D Area for emergency backup) along the Columbia River. Filtered water was used to serve many general operation functions. However, it also was the water used to support the chemical separations process which isolated plutonium. Although the water filtered at 283-E was primarily for use in the 200 East Area, a tie-in line existed to supply water to the 200 West Area in case of an emergency need. Sanitary water was continuously stored in the clearwell so that a water supply would always be available.

The process of filtration in 283-E involved the incorporation of chlorine and alum into the raw water to clean out impurities. Further, mixing is accomplished within the settling basins where solids are settled out of the water. Gravity filters then remove small suspended solids, chlorine is added, and the water flows to clearwells where the chlorine is allowed to completely mix with the water. Water is pumped from the clearwells into the sanitary water grid. Quality checks are performed by drawing out water samples and analyzing the purity/sanitation levels. 283-E maintained its function throughout the Manhattan Project and Cold War Era and is still in operation today. Pumps in the facility were replaced in 1995-1996 and the replacement of the electrical equipment is planned.

The requirement for a sanitary water supply in the 200 East Area was fulfilled entirely by the 283-E Water Filtration Plant operations. It is therefore the conclusion of the U.S. Department of Energy that Building 283-E is eligible for inclusion in the National Register of Historic Places under Criterion A as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

### Description of Physical Appearance

The 283-E Building is a two and three story concrete and structural steel frame building with a below-grade basement (in the head house only). The facility consists of a head house for chemical feeding, chemical mixing and contact chambers, sedimentation/settling basins, and a clearwell. The 283-E Building's foundation is a reinforced concrete pad 18 in. thick having spread footing and oriented east-west.

The head house is an L-shaped building with the longer portion (north-south oriented) two-stories high and the shorter portion (east-west oriented) three-stories high plus a basement level. Roofing material for the structural steel portions of the building consist of concrete tile covered with built-up felt and gravel. Roofing material for the flat concrete frame portions consist of built-up felt and gravel surface and contain two ventilators. Exterior walls are 8 in. concrete block and partitions are 4 in. concrete block. The basement contains four electrical water pumps; the original steam turbines are no longer in service. The basement, as well as the first floor, were constructed with a reinforced concrete frame. The first floor (also the main level) contains a sub-level pipe gallery, laboratory, control chlorination room and an office. The second floor was also constructed with a reinforced concrete frame over the chemical mixing room, but was structural steel frame over the filter portion. This floor contains alum feeders, a mixing room and a sanitary filter. The third floor is structural steel frame throughout. Monorail hoists are used to transport containers of dry chemicals from the ground surface to the third floor storage room through the high-bay double door. This floor contains the alum hoppers.

(See Continuation Page)

**Description of Physical Appearance Continued**

On the west side of the head house are four (originally only two) reinforced concrete settling basins. Each has dimensions of 17 feet by 51 feet with an average storage depth of 12 feet and totaling 80,000 gallons. The basins include baffle mixing and contact chambers. Along the east side of the head house is an underground reinforced concrete covered clearwell reservoir and filtered water pump room. The clearwell reservoir has a storage capacity of 200,000 gallons. The floor in the clearwell is sloped on three sides. The roof is 4 inches thick reinforced concrete covered with a built-up felt and gravel surface extending approximately 6 inches below grade. The pump room has 1 foot thick reinforced concrete walls with spread footings having 18 inches wall between the pump room and the clearwell. It contains three 600 gallons per minute filtered water pumps and one 600 gallons per minute sanitary and fire pump. An opening allows for removal of pumping equipment via an overhead monorail.

**Major Bibliographic References**

AEC-GE Study Group. 1964. *Catalog of Hanford Buildings and Facilities, 200 Areas* . GEH-26434. Richland, Washington.

E.I. du Pont de Nemours Corporation. 1945. *Construction Hanford Engineer Works: History of the Project* . HAN-73214, Volume III. Wilmington, Delaware.

Gerber, M.S. 1993. *Manhattan Project Buildings and Facilities at the Hanford Site: A Construction History* . WHC-MR-0425. Westinghouse Hanford Company. Richland, Washington.

Hopkins, Bill (Fluor Daniel Hanford, Inc.). March 1998. Personal Communication. Richland, Washington.